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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,361	06/28/2004	Masaru Takagi	081356-0219	7605

22428 7590 06/12/2006

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EXAMINER	
CARLSON, KAREN C	

ART UNIT	PAPER NUMBER
1653	

DATE MAILED: 06/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/500,361	TAKAGI ET AL.	
	Examiner	Art Unit	
	Karen Cochrane Carlson, Ph.D.	1653	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 May 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *17-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *17-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *#1-5*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Applicant's election with traverse of Group 3, drawn to peptides having SEQ ID NO: 125: Z1-Asp-Leu-Z2-Leu-Arg-Leu-Z3 wherein Z1 denotes Leu, Asp-Leu, or Leu-Asp-Leu; Z2 denotes Glu, Gln, or Asp; and Z3 denotes 0 to10 amino acid residues in the reply filed on May 1, 2006 is acknowledged. The traversal is on the ground(s) that the peptide and the DNA encoding the peptide have unity of invention. This is not found persuasive because the peptide is not novel and therefore does not have a special technical feature. However, because the DNA was found with the peptide, no serious search burden was placed on the Examiner and the peptide and the DNA have been examined together.

Additionally, Applicants have amended the claims to combine Groups III and IV. Therefore, the election is of SEQ ID NO: 125: Z1-Asp-Leu-Z2-Leu-Arg-Leu-Z3 wherein Z1 denotes Leu, Asp-Leu, or Leu-Asp-Leu; Z2 denotes Glu, Gln, or Asp; and Z3 denotes 0 to10 amino acid residues.

Otherwise, the requirement is still deemed proper and is therefore made FINAL.

Claims 1-16 have been canceled. Claims 17-28 are currently pending and are under examination.

Priority is set to December 26, 2001.

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 17-22 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The peptide and the DNA are not claimed as isolated or purified and therefore read on a product of nature.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 17-23 are rejected under 35 U.S.C. 102(a or e) as being anticipated by Takatsuji et al. (USP 6,215,043 (issued April 10, 2001 and filed September 18, 1998).

Takatsuji et al. teach petunia transcription factor PetSPL2 having Takatsuji et al. SEQ ID NO: 2. In Takatsuji et al. SEQ ID NO: 2, amino acid residues 196-203 in the 206 amino acid sequence are:

Asp-Leu-Asp-Leu-Glu-Leu-Arg-Leu

which comprises instant SEQ ID NO: 126 when Z4 is Glu (Claim 17):

Asp-Leu-Glu-Leu-Arg-Leu

and which is or comprises instant SEQ ID NO: 125 when Z1 is Leu or Asp-Leu, Z2 is Glu, and Z3 is 0-3 amino acids (Claim 18):

Leu-Asp-Leu-Glu-Leu-Arg-Leu

Asp-Leu-Asp-Leu-Glu-Leu-Arg-Leu.

Instant SEQ ID NO: 31 and 61 comprise Asp-Leu-Asp-Leu-Glu-Leu-Arg-Leu at amino acid residues 194-201 and 20-27, respectively. Because instant Claim 19 is drawn to SEQ ID NO: 31 and

SEQ ID NO: 61 having an infinite number of deletions, substitutions, and additions, Takatsuji et al. SEQ ID NO: 2 anticipates SEQ ID NO: 31 and NO: 61 (Claim 19).

Takatsuji et al. teach the gene encoding PetSLP2 as SEQ ID NO: 1 (Claims 20-22).

In Example 3, Takatsuji et al. teach that the plasmid pSPORT/PetSPL2 comprises the gene PetSPL2 was cleaved at Kpn1 and Sac1 restriction enzyme sites, and again at Asc1 and Pac1 restriction enzyme sites. Therefore, double stranded DNA encoding PetSPL2 and having restriction enzyme sites at both ends are taught by Takatsuji et al. (Claim 23).

Claims 17, 18, 19, 20, 21, 22, and 23, are rejected under 35 U.S.C. 102(b) as being anticipated by Sato et al. (2000; Structural analysis of arabidopsis thaliana chromosome 3. Sequence features of the regions of 4,504,864 bp covered by sixty P1 and Tac clones. DNA Res. 7: 131-135).

Sato et al. teach TAC clone K14B15 encoding a 172 amino acid zinc finger transcription factor comprising:

Asp-Leu-Asp-Leu-Asp-Leu-Arg-Leu at positions 159-166

which comprises instant SEQ ID NO: 126 when Z4 is Asp (Claim 17):

Asp-Leu-Asp-Leu-Arg-Leu

and which is or comprises instant SEQ ID NO: 125 when Z1 is Leu or Asp-Leu, Z2 is Asp, and Z3 is 0-6 amino acids (Claim 18):

Leu-Asp-Leu-Aps-Leu-Arg-Leu

Asp-Leu-Asp-Leu-Asp-Leu-Arg-Leu.

Instant SEQ ID NO: 31 and 61 comprise Asp-Leu-Asp-Leu-Glu-Leu-Arg-Leu at amino acid residues 194-201 and 20-27, respectively. Because instant Claim 19 is drawn to SEQ ID NO: 31 and SEQ ID NO: 61 having an infinite number of deletions, substitutions, and additions, Sato et al. SEQ ID NO: 2 anticipates SEQ ID NO: 31 and NO: 61 (Claim 19).

Sato et al. teach the gene encoding TAC clone K14B15 (Claims 20-22) as genomic DNA (Claim 23). Because Arabidopsis Chromosome 3 was mapped, this DNA is considered to have restriction enzyme sites on each end.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 17-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takatsuji et al. (USP 6,215,043 (issued April 10, 2001 and filed September 18, 1998).

The teachings of Takatsuji et al. regarding Claims 17-23 are set forth above.

As noted in the restriction requirement:

> If Applicants believe that their sequences are so overlapping as to be obvious variants of each other, Applicants may choose a single sequence for search, this sequence being a representative sequence of all sequences or a designated subset of the sequences, as Applicant may choose. If Applicant present a single sequence to represent all sequences claimed, **it will be understood that if this sequence or any sequence is found, the remaining sequences will be considered to be obvious variants of the found sequence.**

Applicants elected Group 3, drawn to peptides having SEQ ID NO: 125: Z1-Asp-Leu-Z2-Leu-Arg-Leu-Z3 wherein Z1 denotes Leu, Asp-Leu, or Leu-Asp-Leu; Z2 denotes Glu, Gln, or Asp; and Z3 denotes 0 to10 amino acid residues.

Takatsuji et al. teach claimed sequences Asp-Leu-Glu-Leu-Arg-Leu, Leu-Asp-Leu-Glu-Leu-Arg-Leu, and Asp-Leu-Asp-Leu-Glu-Leu-Arg-Leu and the DNA encoding these sequences.

Therefore, the remaining sequences, including the chimeric proteins and genes, are considered to be obvious variants of the found sequences (Claims 17-25).

Takatsuji et al. teach transformation of *Agrobacterium tumefaciens* (petunia) cells with plasmid pBIN-35S-PetSPL2 vectors in Example 4. These cells are used to make transformed plants. In Example 5, Takatsuji et al. teach plants transformed with the PetSPL2 gene. These plants were drawfs, and this phenotype is useful for ornamental flowers or horticulture, such as compacting the size of fruit trees for efficient fruit harvesting (Example 6).

It would have been obvious to a person having ordinary skill in the art to transform *Agrobacterium tumefaciens* (petunia) cells and make plants transformed with genes encoding peptides comprising Asp-Leu-Glu-Leu-Arg-Leu, Leu-Asp-Leu-Glu-Leu-Arg-Leu, and Asp-Leu-Asp-Leu-Glu-Leu-Arg-Leu or the obvious variants thereof because Takatsuji et al. teach that transformation of cells (Claims 26, 27) and the production of plants (Claim 28) with the genes encoding these peptides are useful for ornamental flowers or horticulture, such as compacting the size of fruit trees for efficient fruit harvesting.

Claims 17-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. (2000; Structural analysis of arabidopsis thaliana chromosome 3. Sequence features of the regions of 4,504,864 bp covered by sixty P1 and Tac clones. DNA Res. 7: 131-135).

The teachings of Sato et al. regarding Claims 17-23 are set forth above.

As noted in the restriction requirement:

> If Applicants believe that their sequences are so overlapping as to be obvious variants of each other, Applicants may choose a single sequence for search, this sequence being a representative sequence of all sequences or a designated subset of the sequences, as Applicant may choose. If Applicant present a single sequence to represent all sequences claimed, **it will b und rstood that if this s qu nc r any**

s qu nc is found, th r maining s qu nc s will b c nsid r d to b obvious variants of the found sequence.

Applicants elected Group 3, drawn to peptides having SEQ ID NO: 125: Z1-Asp-Leu-Z2-Leu-Arg-Leu-Z3 wherein Z1 denotes Leu, Asp-Leu, or Leu-Asp-Leu; Z2 denotes Glu, Gln, or Asp; and Z3 denotes 0 to10 amino acid residues.

Sato et al. teach claimed sequences Asp-Leu-Asp-Leu-Arg-Leu, Leu-Asp-Leu-Asp-Leu-Arg-Leu, and Asp-Leu-Asp-Leu-Asp-Leu-Arg-Leu and the DNA encoding these sequences. Therefore, the remaining sequences, including the chimeric proteins and genes, are considered to be obvious variants of the found sequences (Claims 17-25).

No Claims are allowed. Of note, it appears that had Applicants limited their claims to the chimeric protein or chimeric gene instead of any peptide comprising SEQ ID NO: 125 or DNA encoding any peptide comprising SEQ ID NO: 125, they would have had allowable subject matter. Instead, because only a single sequence was searched in the independent claims, the remaining sequences are obvious variants of the searched sequence.

Other art of record:

Sakai et al. (1995; Role of *SUPERMAN* in maintaining *Arabidopsis* floral whorl boundaries. Nature 9: 199-203) teach a transcription factor comprising the sequence Asp-Leu-Asp-Leu-Glu-Leu-Arg-Leu.

Hiratsu et al. (2004 ; Identification of the minimal repression domain in SUPERMAN shows that the DLELRL hexapeptide is both necessary and sufficient for repression of transcription in Arabidopsis. Biochem. Biophys, Res. Commun. 321:172-178) teach that the minimal repression domain in SUPERMAN is Asp-Leu-Glu-Leu-Arg-Leu hexapeptide which is both necessary and sufficient for repression of transcription in Arabidopsis.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karen Cochrane Carlson, Ph.D. whose telephone number is 571-272-0946. The examiner can normally be reached on 7:00 AM - 4:00 PM, off alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Jon Weber can be reached on 571-272-0925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Karen Cochrane Carlson PhD

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PRIMARY EXAMINER